

1. A method of processing frames of data comprised of framework bytes and a payload, comprising:

identifying a start of a first frame and a phase of the first frame concurrently based on the framework bytes; and

5 aligning data in a second frame, based on the phase of the first frame, to make a start of the second frame coincide with a start of a byte boundary.

10 2. The method of claim 1, wherein the framework bytes identify the start of the first frame.

15 3. The method of claim 1, further comprising:

receiving the data for the first frame; and

20 storing the data for the first frame in N ($N \geq 2$) registers;

25 wherein the phase of the first frame is identified based on a location of the start of the first frame in the N registers.

20 4. The method of claim 3, further comprising:

locating the start of the first frame in the N registers.

5. The method of claim 4, wherein locating the start of the first frame comprises:

comparing data for the first frame in the N registers to predetermined values for the frameword bytes.

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6. The method of claim 3, wherein identifying the phase of the first frame comprises determining a location, in one of the N registers, of a first bit of data for a first frameword byte.

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7. The method of claim 3, wherein the location of the start of the first frame in the N registers is determined based on whether a value stored in one of the N registers corresponds to a set of predefined values.

8. The method of claim 6, wherein aligning the data comprises shifting the first bit of data so that a first bit of data in the second frame is at a start of one of the N registers.

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9. The method of claim 1, further comprising:
dividing the data for the first and second frames into blocks;

wherein the start of the first frame and the phase of the first frame are identified in one of the blocks and aligning is performed on the second frame.

5 10. The method of claim 1, further comprising:
 identifying a predetermined number of frames following
 identifying the start of the first frame and the phase of the
 first frame;
 wherein aligning is performed on the second frame after
 identifying the predetermined number of frames.

10 11. The method of claim 1, wherein the start of the byte boundary comprises a start of a word boundary.

15 12. An apparatus for processing frames of data comprised
 of framework bytes and a payload, comprising:
 a detector which identifies a start of a first frame and
 a phase of the first frame concurrently based on the framework
 bytes; and
 20 a word rotator which aligns data in a second frame, based
 on the phase of the first frame, to make a start of the second
 frame coincide with a start of a byte boundary.

13. The apparatus of claim 12, wherein the frameword bytes identify the start of the first frame.

14. The apparatus of claim 12, wherein:

5 the detector comprises N ($N \geq 2$) registers which receive the data for the first frame, and which store the data for the first frame; and

the detector identifies the phase of the first frame based on a location of the start of the first frame in the N registers.

10 15. The apparatus of claim 14, wherein the detector locates the start of the first frame in the N registers.

15 16. The apparatus of claim 15, wherein the detector locates the start of the first frame by comparing data for the first frame in the N registers to predetermined values for the frameword bytes.

20 17. The apparatus of claim 14, wherein the detector identifies the phase of the first frame by determining a location, in one of the N registers, of a first bit of data for a first frameword byte.

18. The apparatus of claim 14, wherein the detector
determines the location of the start of the first frame in the
N registers based on whether a value stored in one of the N
5 registers corresponds to a set of predefined values.

19. The apparatus of claim 17, wherein the word rotator
aligns the data by shifting the first bit of data so that a
first bit of data in the second frame is at a start of one of
the N registers.

10 20. The apparatus of claim 12, further comprising:
circuitry which divides the data for the first and second
frames into blocks;

15 wherein the detector identifies the start of the first
frame and the phase of the first frame in one of the blocks
and the word rotator performs aligning on the second frame.

20 21. The apparatus of claim 12, further comprising:
a state machine which identifies a predetermined number
of frames following identifying the start of the first frame
and the phase of the first frame;

wherein the word rotator performs aligning on the second frame after the state machine identifies the predetermined number of frames.

5 22. The apparatus of claim 12, wherein the start of the byte boundary comprises a start of a word boundary.

10 23. An article comprising a machine-readable medium that stores executable instructions to process frames of data comprised of framework bytes and a payload, the instructions causing a machine to:

identify a start of a first frame and a phase of the first frame concurrently based on the framework bytes; and align data in a second frame, based on the phase of the first frame, to make a start of the second frame coincide with a start of a byte boundary.

15 24. The article of claim 23, wherein the framework bytes identify the start of the first frame.

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25. The article of claim 23, further comprising instructions that cause the machine to:

receive the data for the first frame; and

store the data for the first frame in N ($N \geq 2$) registers; wherein the phase of the first frame is identified based on a location of the start of the first frame in the N registers.

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26. The article of claim 25, further comprising instructions that cause the machine to:

locate the start of the first frame in the N registers.

10 27. The article of claim 26, wherein locating the start of the first frame comprises:

comparing data for the first frame in the N registers to predetermined values for the frameword bytes.

15 28. The article of claim 25, wherein identifying the phase of the first frame comprises determining a location, in one of the N registers, of a first bit of data for a first frameword byte.

20 29. The article of claim 25, wherein the location of the start of the first frame in the N registers is determined based on whether a value stored in one of the N registers corresponds to a set of predefined values.

30. The article of claim 28, wherein aligning the data comprises shifting the first bit of data so that a first bit of data in the second frame is at a start of one of the N
5 registers.

31. The article of claim 23, further comprising instructions that cause the machine to:

divide the data for the first and second frames into
10 blocks;

wherein the start of the first frame and the phase of the first frame are identified in one of the blocks and aligning is performed on the second frame.

32. The article of claim 23, further comprising instructions that cause the machine to:

identify a predetermined number of frames following identifying the start of the first frame and the phase of the first frame;

20 wherein aligning is performed on the second frame after identifying the predetermined number of frames.